

REMARKS

Applicant respectfully request reconsideration of this application and reconsideration of the Office Action dated November 20, 2002.

Claims 1-13 remain pending in this application. Claims 5-10 have been objected to as containing allowable subject matter but being dependent on a rejected base claim.

The claims stand objected to. Claims 1, 4, and 10 have been amended as suggested by the Examiner.

Claims 1 and 2 stand rejected under 35 U.S.C. 103(a) as unpatentable over Hiromitsu in view of Nakaya. Applicants traverse.

Claim 1 recites, *inter alia*:

“ an inner electrode arranged at one end in this glass tube and
given a potential and
an outer electrode comprising a conductor spirally wound
around said glass tube between its both ends along an axis of said
tube and given a potential than that is given said inner electrode.”

The difference between the fluorescent lamp disclosed by Hiromitsu and that as claimed in claim 1 is that the lengths of the inner electrode are different from each other. The inner electrode of Hiromitsu is extended along almost the entire length of the tube. The inner electrode of claim 1 is, however, provided at one of the end portion of the tube. Based on the difference of the structure of

the inner electrode, a discharge pattern of the lamps are different from each other. In the lamp of claim 1, the discharge arc is formed between the inner electrode at one end of the tube and the outer electrode spirally wound around the outer surface of the tube. Thus, the arc is extended along the length of the tube. In the lamp of Hiromitsu, on the other hand, the discharge arc is formed between the inner electrode extended along almost the entire length of the tube. Thus, the arc is formed along a radial direction of the tube and distributed along almost the entire length of the tube.

The fluorescent lamp of the type disclosed by Hiromitsu is susceptible to mechanical shocks, since the inner electrode is apt to be dislocated from an axis of the tube by the mechanical shocks. However, in the fluorescent lamp according to claim 1, the inner electrode is not affected by the mechanical shocks and therefore a stable discharge operation is provided.

Nakaya fails to teach or suggest modifications to Hiromitsu that address the above-identified aspect of claim 1. As both references fail to teach or suggest this recitation and the Examiner has not addressed this recitation, the combination fails to teach or suggest claim 1 as drafted.

For the above reasons, claim 1 is allowable over the combination of Hiromitsu in view of Nakaya

Applicant submits claims 2 and 3 are allowable for the reasons set forth above.

Claims 4 and 11-13 stand rejected over Larson in view of Roche. Applicant traverses this rejection.

Larson et al. teaches a high-intensity-discharge sodium lamp having a pair of inner electrodes on both end of an arc tube and a trigger electrode wrapped about the exterior of the arc tube proximate to one of the inner electrode. The discharge arc is generated between the pair of inner


electrodes on both end of an arc tube pattern of the lamp and is triggered by the trigger electrode wrapped about the exterior of the arc tube.

In the fluorescent lamp according to claim 4, on the contrary, the discharge arc is formed between the inner electrode at one end of the tube and the outer electrode spirally wound around the outer surface of the tube throughout its operation. The fluorescent lamp according to claim 4 is driven by alternating pulse current, in which the discharge is intermittently generated and thus is called a dielectric barrier discharge lamp.

In the fluorescent lamp according to Larson et al., the discharge is continuously generated between the pair of inner electrodes on both end of an arc tube. The frame 32, which is electrically connected to the trigger electrode 40 is also electrically connected to one of the pair of inner electrodes on both end of an arc tube via a resilient braide conductor 34. In the fluorescent lamp according to claim 4, however, the second feeding lead wire is not electrically connected to the inner electrode. This distinction is not addressed in Roche. As neither reference teaches this distinction, the combination fails to teach or suggest this distinction. Accordingly claims 4 and 11-13 are allowable over the combination.

Applicant submits the present application is in condition for allowance. If the Examiner has any questions, the Examiner is invited to contact the undersigned.

Respectfully Submitted,


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MARKED-UP VERSION TO SHOW CHANGES

IN THE CLAIMS:

Please amend the claims as follows:

1. (Amended) A fluorescent lamp comprising:
a glass tube both ends of which are sealed airtight and a discharge medium filled in the inside;
a fluorescent substance layer formed on the inner wall surface of said glass tube;
an inner electrode arranged at one end in this glass tube and given ~~with~~ a potential and
an outer electrode comprising a conductor spirally wound around said glass tube between its both ends along an axis of said tube and given ~~with the other~~ a potential than that is given said inner electrode.
4. (Amended) A fluorescent lamp comprising:
a glass tube having a fluorescent substance film formed at an inner surface and having sealing portions formed at both ends thereof so that a discharge medium is filled inside the glass tube; a first feeding lead wire penetrating one of said sealing portions of said glass tube airtight,
an inner electrode connected to an end of said feeding lead wire extended into said glass tube;
a second feeding lead wire one end of which is buried in the other sealing portion of said glass tube, and the other end is lead out of said glass tube; and
an outer electrode ~~composing of~~ comprising a conductor spirally wound around an outer surface of said glass tube along an axis of said tube with an end of the conductor being electrically connected and mechanically fixed to said second feeding lead wire.

10. (Amended) A fluorescent lamp according to claim 8, wherein the discharge medium is xenon-gas or a mixture of xenon-gas and at least one other rare gas.